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CLAIMS:

1. Apparatus for transmitting information by means  
of electromagnetic fields in free space comprising an  
5 antenna in the form of a super-toroidal conductor  
including a length of conductor  $l$ , an electrical  
signal generator controllable to produce electrical  
signals having at least a selected frequency which is  
not less than  $2c/l$  where  $c$  is the speed of light in  
10 free space, a coupler to couple said electrical  
signals from said generator to energise said antenna  
for launching the electromagnetic fields to transmit  
the information, and a modulator to modulate the  
electromagnetic fields launched by the antenna in  
15 accordance with the information to be transmitted.

2. Apparatus for receiving information transmitted  
by means of electromagnetic fields in free space from  
a distant source, the apparatus comprising an antenna  
20 in the form of a super-toroidal conductor having a  
length of conductor  $l$ , a receiver controllable to  
receive electrical signals having at least a selected  
frequency which is not less than  $2c/l$  where  $c$  is the  
speed of light in free space, a coupler to couple,  
25 from the antenna to the receiver, electrical signals  
produced in the antenna due to information with  
electromagnetic fields carrying the transmitted  
information, and a detector for detecting the  
information from the electrical signals.

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